

CLAIMS

What is claimed is:

1. A peripheral device, comprising:
peripheral circuitry operable to perform a desired function responsive to control
5 signals; and
a programmable controller adapted to receive and store firmware that is selected in
response to a functional mode request, and the controller being further operable to
execute the stored firmware and to develop the control signals to control the
peripheral circuitry in response to the executing firmware.
- 10 2. The peripheral device of claim 1 wherein the programmable controller is
further operable to develop the functional mode request in response to selection
inputs applied to the peripheral device.
3. The peripheral device of claim 2 wherein the peripheral circuitry comprises
mechanical components.
- 15 4. The peripheral device of claim 1 wherein the functional mode request is
generated external to the programmable controller.
5. The peripheral device of claim 1 wherein the peripheral device comprises a
printer and wherein the peripheral circuitry comprises a print engine.
6. The peripheral device of claim 5 wherein the peripheral circuitry further
20 comprises a scanning subsystem, copier subsystem, and a facsimile subsystem.
7. The peripheral device of claim 1 wherein the programmable controller is
further operable to perform an integrity check of the firmware prior to executing the
firmware.

8. The peripheral device of claim 1 wherein the functional mode request is associated with a function of the device and the function of the device is associated with the stored firmware, and wherein the programmable controller is further operable to erase the firmware when the peripheral device has performed the
5 associated function.

9. The peripheral device of claim 1 wherein the programmable controller includes a digital signal processor for image processing of print or scanned data.

10. A computer network, comprising:
a peripheral device, comprising:
10 peripheral circuitry operable to perform a desired function responsive to control signals; and
a programmable controller adapted to receive and store firmware that is selected in response to a functional mode request, and the controller being further operable to execute the stored firmware and to develop the control signals to control the
15 peripheral circuitry in response to the executing firmware; and
a computer system coupled to the programmable controller, the computer system including a software component operable to provide the firmware to the controller responsive to the functional mode request.

20 11. The computer network of claim 10 wherein the programmable controller is further operable to develop the functional mode request responsive to selection inputs applied to the peripheral device.

25 12. The computer network of claim 10 wherein the software component is further operable to develop the functional mode request responsive to selection inputs applied to the computer system.

13. The computer network of claim 12 wherein the software component is further operable to determine whether an updated version of the firmware corresponding to the functional mode request is available, and if an updated version is available to transfer the updated version to the programmable controller.

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14. The computer network of claim 13 wherein the software component is further operable to access a Web site to determine whether an updated version of the firmware is available and to download the updated version to the computer system when available.

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15. The computer network of claim 14 wherein the software component determines that an updated version of the firmware is available by communicating with a Web site to receive an updated version indicator from the Web site and to compare this updated version indicator to a version indicator stored on the computer system, and is further operable to download to the computer system an updated version of the firmware when available.

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16. The computer network of claim 15 wherein the software component is further operable to compare a controller version indicator stored in the controller or on the computer system with a controller version indicator received from the Web site along with the updated firmware, and is operable to download the updated version of the firmware only if controller version indicators indicate the updated firmware is compatible with the controller in the peripheral device.

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17. The computer network of claim 15 wherein the software component is further operable to communicate with the Web site to determine whether an updated version of the software executed by the software component is available, and to download an updated version of this software when available.

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18. The computer network of claim 10 wherein the peripheral device comprises a printer.

19. A method of operating a peripheral in a computer system including a host
5 computer, the peripheral device being operable in a plurality of functional modes and the method comprising:
selecting a functional mode of the peripheral device;
in response to the selection of the functional mode, transferring firmware to the device, the firmware corresponding to the selected functional mode;
10 storing the firmware in the peripheral device; and
executing the firmware in the peripheral device to operate the peripheral device in the selected functional mode.

20. The method of claim 19 wherein selecting a functional mode of the
15 peripheral device comprises selecting in the host computer the functional mode of the device.

21. The method of claim 19 wherein selecting a functional mode of the
peripheral device comprises applying selection inputs to the peripheral device to
20 select the functional mode.

22. The method of claim 19 wherein the peripheral device comprises a printer.

23. The method of claim 22 wherein the selected mode corresponds to one of a
25 print, scan, copy, and fax mode of operation of the peripheral device.

24. The method of claim 19 wherein executing the firmware in the peripheral device to operate the device in the selected mode comprises executing the image processing firmware in a digital signal processor contained in the device.

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25. The method of claim 24 further comprising performing image processing with parallel digital signal processors.